

NPIC/TSSG/DED-1649-69
5 June 1969

MEMORANDUM FOR: Chief, Technical Services & Support Group

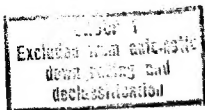
SUBJECT : Image Comparison Microstereoscope

1. In your recent note, dated 3 June, you had some questions regarding the high cost of production versions of the Image Comparison Microstereoscope and asked DED to give you some of the rationale behind it.

2. There are two major elements involved. One is the tremendous complexity of the device, and the second is the fact that we will probably produce only limited quantities (5-10). With regards to the complexity, the following factors are pertinent. The Image Comparison Microstereoscope is an instrument designed to: (1) permit intensive study of limited areas, (2) evaluate comparative coverage, and (3) serve as an aid in change detection. It is a highly specialized tool and we anticipate that probably only one instrument would be required per division in IEG, IAS, etc. The instrument has four separate stages and a complex optical system which allows any of these stages to be viewed in various combinations of two. It has a split field to facilitate quick image comparison--much like a ballistics microscope. However, the instrument has two highly specialized features in this regard. The split field is movable, i.e., you can obtain varying percentages of imagery from either stage, and it is the first instrument which, to our knowledge, permits split field viewing in stereo, i.e., both sides of the split field are in the forms of stereo images. The instrument, of course, permits superimposition and standard stereo viewing of any logical sequence of conjugate images. Because of the nature of our photography, and the inherent distortions involved, and since on comparative coverage you often have to look at missions of different scales, the instrument has independent and common stages and independent and common zoom. In addition, we have to incorporate both image rotation and anamorphic correction in each and every optical channel. When all of these capabilities are pulled together into a single reasonable, human engineered package, you have an extremely complex and sophisticated optical device.

3. It is reasonable to expect that the cost could be reduced if we went into large quantity production--thirty or more; however, due to

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the specialized nature of the device, this does not appear to be a reasonable assumption, and in any case we could probably never reduce the cost below [] due to the sheer complexity of the instrument.

[]
Chief, Development & Engineering Division, TSSG

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